INTERIM PERFORMANCE REPORT

STATE: **MONTANA**
GRANT TITLE: **Montana Terrestrial, Riparian and Wetland SWG Program**
GRANT NUMBER: **T-37-HM**

PRIORITY WORK PROPOSED FOR FY2008 FUNDING SEGMENT

PROJECT 1. Terrestrial and Riparian/Wetland Habitat Conservation

The Missouri Coteau and Glaciated Plains of the Milk and Missouri Rivers: This habitat-focused project will protect and restore Tier 1 Community Types with priority given to riparian and wetland habitats and sagebrush-grassland complexes along the Milk and Missouri River corridors that bisect the Missouri Coteau and Montana Glaciated Plains Focus Areas in FWP Region 6 and within the Great Plains portion of the Missouri and Yellowstone River watersheds in FWP Regions 4, 5 and 7. Projects will identify, negotiate, and implement a combination of fee title acquisitions, conservation easements, and 30-year sagebrush leases on priority private lands within these corridors.

These habitat conservation measures will include stipulations and terms that protect and maintain key vegetation components, and prohibit land management uses that could degrade or fragment important habitat types. In addition, enhancement activities will seek to restore and increase cottonwood and riparian shrub communities where feasible, re-establish native grassland communities and restore drained and or degraded wetland habitats.

Baseline wildlife inventories documenting distribution and abundance of key species groups (bats, reptiles, amphibians, small mammals and birds) will be conducted on existing WMAs, conservation easements, and 30-year lease properties, as well as on newly acquired properties.

Work items for FY2008:

- Conserve 20,000 acres under fee title acquisition, conservation easement or 30-year lease agreements. **NOTE: prior to pursuing any easement or acquisition, this grant will be amended to include a description of the parcel(s), as well as current appraisals, location maps, and other information as required.**
- Initiate 1 or more managed livestock grazing systems to enhance riparian and shrub-grassland habitats, and work with private landowners to implement rest-rotation grazing prescriptions, typically employing a three or four pasture system.
- Restore up to 100 acres of riparian (cottonwood and shrub) habitat. Efforts will include deferment of farming activities or livestock grazing in areas subjected to periodic flooding where natural regeneration of cottonwoods, willows and other species would occur, as well as replanting native tree and shrub species in areas subjected to high water tables. The intent would be to allow existing cropland to revert to the native Tier 1 vegetation communities dominated by riparian species.
- Restore up to100 acres of native shrub-grassland habitat. This will be accomplished by returning existing cropland in the riparian corridor to native shrub and herbaceous species composition, largely through replanting efforts. The goal is to convert nonnative,

introduced hay meadows or cropland back into native plant species zones, which will act as a buffer to adjacent cottonwood galleries.

- Complete baseline inventory surveys for species diversity, focusing on designated species groups.

Accomplishments

Riparian songbird surveys were completed on the Olsen Easement. Fourteen sites were surveyed with three repetitions each. A total of 503 birds were observed covering 52 species including ovenbird, great blue heron and Baltimore oriole. One veery and one red-eyed vireo were also observed.

Riparian songbird surveys were completed on the Sauer Easement. Ten sites were surveyed with three repetitions each. A total of 316 birds were observed covering 43 species including American white pelican and Baltimore oriole.

Riparian songbird surveys were completed on the Cornwell Easement. Eight sites were surveyed with two or three repetitions each. A total of 179 birds were observed covering 38 species including red headed woodpecker, bald eagle, American white pelican and Baltimore oriole. One veery was also observed.

Native grassland songbird surveys were completed on the Sauer Easement using three transects with three points each. A total of 301 birds were observed covering 39 species including lark bunting.

7 Dense Nesting Cover and 5 Permanent Cover surveys were completed on the Olsen Easement. 32 species were recorded including bobolink.

Conducted aerial surveys for Great Blue Heron rookeries and Bald Eagle nests along the Yellowstone River from the confluence with the Bighorn to the Montana/North Dakota boarder. 15 (37.8% decline from 1988) heron rookeries (10 active, 5 non-active, largest 40 nests, average 16.2 nests) and 33 active bald eagle nests were located.

Conducted an aerial survey for Great Blue Heron rookeries and Bald Eagle nests along the Powder River from the confluence with the Yellowstone to the Montana/Wyoming Boarder. 6 heron rookeries (4 active, 2 non-active, largest 15 nests, average 5.8 nests), and 5 Bald Eagle nests (all active) were located.

Conducted an aerial survey for Great Blue Heron rookeries and Bald Eagle nests along the Tongue River from the confluence with the Yellowstone to the Montana/Wyoming Border. 9 heron rookeries (7 active, 3 non-active, largest 55 nests, average 13.0 nests), 1 double-crested cormorant rookery (50 nests) and 12 Bald Eagle nests (all active) were located.

Conducted a roadside trend raptor survey starting at Plevna and ending south of Baker. 12 diurnal raptors, 1 Ferruginous hawk nest, 1 Red-tailed hawk nest and a 3 nest non-active heron rookery near a stock pond were documented.

Conducted an aerial survey of known bald eagle and great blue heron nests sites for reproduction along the Yellowstone River from the confluence with the Bighorn to Miles City. 9 heron rookeries (4 active, 5 non-active, 1 rookery showing greater than 1 nestling/active nest) and 19 active bald eagle nests (37 nestlings) were reported.

Conducted an aerial survey of known bald eagle and great blue heron nests sites for reproduction along the Yellowstone River from Miles City to the Montana/North Dakota boarder. 4 heron rookeries (3 active, 1 non-active, all three rookeries showing greater than 1 nestling/active nest) and 13 active bald eagle nests (24 nestlings) were reported.

Conducted 2 terrestrial and 2 riparian herpetological surveys on the upper parcel of the Tongue River Ranch. Western chorus frogs, woodhouse's toads, short-horned lizards, western rattlesnake and Great Plains toads were reported.

Conducted 1 terrestrial herpetological survey on the Tongue River Ranch and Hirsh Conservation Easements. Western chorus frogs, woodhouse's toads, short-horned lizards, and common garter snakes were reported.

Conducted 2 terrestrial and 2 riparian herpetological surveys on the lower parcel of the Tongue River Ranch. Western chorus frogs, woodhouse's toads, short-horned lizards, Great Plains toads, plains spadefoot and gopher snakes were reported.

Conducted an aerial survey of known bald eagle and great blue heron nests sites for reproduction along the Powder River from the confluence with the Yellowstone to the Montana/Wyoming boarder. Reported 6 heron rookeries (2 active, 4 non-active, 10 nestlings) and 9 bald eagle nests (8 active, 1 non-active) (5 nestlings) were reported.

Conducted 1 terrestrial and 2 riparian herpetological surveys on the Tongue River Ranch. Western chorus frogs, woodhouse's toads, short-horned lizards, and Great Plains toads were reported.

Conducted an aerial survey of known bald eagle and great blue heron nests sites for reproduction along the Tongue River from the confluence with the Yellowstone to the Montana/Wyoming boarder. Reported 10 heron rookeries (8 active, 2 non-active, about 160 nestlings) and 5 active bald eagle nests (4 active, 1 non-active) (15 nestlings) were reported.

Variances

A large easement purchase was scheduled for the fall of 2008; however, the project was not approved by the State Land Board and so FWP could not proceed. Staff are currently working on a substitute acquisition, and will submit the necessary documentation to the FWS as soon as it is available.

PROJECT 2. Species-Based Conservation

Prairie Dogs (black and white-tailed), Mountain Plover, Burrowing Owl, and Greater Sage-Grouse: Over their range, prairie dogs have declined in abundance and distribution primarily as a result of extensive poisoning, loss of habitat and disease. The prairie dog is an important native component of the prairie ecosystems, and it provides unique habitat for a variety of species, including mountain plover and burrowing owls. Loss of active prairie dog colonies has impacted habitat available for these two species. The primary breeding and brood rearing habitat of burrowing owls is prairie dog towns. Mountain plover prefer areas of extremely short vegetation, which is created in many cases by prairie dog grazing patterns.

Sage-grouse are obligate species of the sagebrush steppe, and their distribution and abundance is closely tied to the quality and quantity of remaining sagebrush grassland habitats. Threats to sage grouse include continued habitat loss and fragmentation resulting from a variety of factors, disease (West Nile Virus) and extended drought.

At least three of the five species described above have been petitioned for listing under the ESA, and USFWS decisions relative to the "not warranted" or "warranted but precluded" status have been challenged by litigation. All have been designated Tier 1 species of greatest conservation need in Montana's Comprehensive Strategy and Implementation Plan.

Given the continued regional and statewide concern over the status of prairie dogs, the recognized importance of their colonies as habitat for ferret, plover and owl populations, and the negative consequences of recent plague epizootics and drought conditions, it is important for Montana to assess the current distribution and abundance of prairie dogs. This assessment will be based on the most recent and evolving scientific protocols and would be conducted by qualified contractors or FWP technicians.

The first step in this assessment will be to review current methodology for estimating prairie dog acreage (e.g. Sidle et al. 2001; White et al. 2005, Wyoming Game and Fish 2004), as compared to a mapping census to achieve a minimum estimate (e.g. Faunawest 1998). These methods are based on variations of line intercept survey techniques, including the incorporation of digital air photos and ground-truthing. The goal will be to find a sampling strategy to yield an estimate (with confidence intervals) of prairie dog acreage in Montana. Given the extent of black-tailed prairie dog range in Montana, the second step to complete an inventory will take more than one year. FWP and NHP have been maintaining a database of all known prairie dog colonies, and this will be used to assist in determining the appropriate methodology for Montana, and completing our inventory. Upon completion, this assessment will provide the basis for developing and implementing a prairie dog monitoring program, and will assist in the development of FWP regional prairie dog management plans.

Furthermore, once a spatial assessment of prairie dog colonies has been completed, surveys for mountain plover and burrowing owls will be conducted to assess population status and geographic distribution across Montana. Prairie dog colonies will be selected (using stratified random sampling) for surveys of mountain plover and burrowing owl. In Montana, mountain plover (Knowles et al. 1982) and burrowing owl (Montana Prairie Dog Working Group 2002)

are highly associated with prairie dog colonies. Visual surveys for mountain plover will follow the USFWS guidelines for Montana (March 2002) in May and June. Burrowing owl methodology will follow similar techniques conducted in Montana from 1999-2005 (Atkinson and Atkinson 2005). Both methodologies are visually based and timed to optimize the likelihood of correctly determining positive occurrence of these species where they are present. This will involve the use of technicians and/or contractors to conduct the assessments. As noted above, this will provide the basis for developing and then implementing monitoring programs to track changes in population trends.

Work Items for FY2008:

- Determine scientific approach for assessing status and distribution of active prairie dog colonies.
- Conduct assessment for approximately half of the species range (black-tailed and white-tailed) in Montana and update existing tabular and spatial databases.

Accomplishments

The Prairie Dog assessment was begun with the completion of initial planning and study design, purchased of required equipment and software, and the hiring of a conservation technician. The contracts for aerial surveys were completed and approximately 50 transects in Rosebud and Custer County were flown with approximately 75 prairie dog colony intercepts recorded.

Variances

None

PROJECT 3. Survey and Inventory Conservation Activities

Bats, Reptiles and Diversity Monitoring Protocols: Completing statewide baseline assessments of the status and distribution of terrestrial reptiles and bats (Tier 1 Inventory priorities) will provide the foundation for determining the appropriate steps to be taken to conserve these species groups. Establishing statewide sampling schemes for monitoring the status and distribution of bats and reptiles, which will be compatible with efforts undertaken by the USFS and BLM for these same species groups, will be essential in providing a cost effective and disciplined approach across all landownership jurisdictions.

This project is being undertaken to provide a sampling scheme and framework of methodologies that can be combined with those previously developed for small mammals, birds, and amphibians for simultaneous long-term monitoring of a diversity of wildlife on public and private lands. This work will be accomplished utilizing existing FWP and MNHP (Montana Natural Heritage Program) staff, seasonal technicians, and other cooperators. The project will likely include up to 6 inventory crews who are active during the May-August field survey period. Bat-call recordings will be analyzed by MNHP staff for verification purposes, and their protocols for amphibian and reptile inventory procedures will be followed at all times. All species information will be placed in the statewide Point Observation Database (POD).

Bats Surveys

Bats will be sampled using a combination of acoustic and mist netting surveys, to best document species occurrence (Kuenzi and Morrison 1998). Bat capture and handling protocols generally follow those recommended by Vonhof (2000), and those described by Lenard et al. (2007). Bat echolocation calls will be recorded using Anabat or Petterrssons bat detectors and analyzed in the field or stored for later analysis using appropriate software (Anabat or SonoBat). Bat detectors will be deployed concurrently with mist netting, and/or set to autorecord for the duration of the night. Bat call recordings will be analyzed by MNHP staff for verification purposes and archived on the MNHP server for future reference. Multiple mist nets will be placed at a variety of sites, including isolated water sources, caves or accessible rock crevices, and under riparian and woodland canopies, where bats are likely to be concentrated while foraging or accessing roosting sites. Netting will begin at dusk and continue for at least 2-3 hours. Animals caught will be sexed, aged, measured and released or disposed. Retained specimens will be deposited at the Philip L. Wright Zoological Museum in Missoula, Montana. Genetic samples (wing biopsy) may be taken to assist with identification of cryptic species (Myotis lucifugus and M. yumanensis), in locations where the two species overlap in range (Zinck et al. 2004, Scott 2005, Weller et al. 2007).

Vegetation characteristics will also be documented at each sampling site to gain information on habitat relationships of detected species. In particular, we will gather data on mean height and percent cover of the dominant forms, and generate a list of the dominant species. These data will be recorded at each trap line. All survey data will be processed into the MNHP occurrence databases (accessible through the EO Portal), and new species and habitat information will be incorporated into the field guide databases. Digital maps of species distributions and key habitat areas will be produced and maintained on file, along with habitat images in digital format. Species and habitat data will be summarized in a final report, with supporting documentation.

Amphibian and Aquatic Reptile Surveys

Amphibian and aquatic reptile surveys generally follow methods outlined in Heyer et al. (1994), Reichel (1997) and Maxell (2004).

<u>Lentic Site Surveys</u>

Sixth level (12 digit) hydrologic unit code (HUC) watersheds will be the basic sampling unit for the lentic site surveys in order to be consistent with methodology employed by the statewide amphibian and aquatic reptile monitoring sampling scheme. Within each 6th level HUC all standing water bodies identified on 7.5-minute (1:24,000 scale) topographic maps or recent aerial photos will be surveyed for lentic breeding amphibians and aquatic reptiles using timed visual encounter and dip net surveys. This yields information on presence/non detection and relative abundance (number of individuals detected per surveyor per unit time) of each life history stage of each species at each site that can be used as a measure of current status in relation to various habitat characteristics and for comparison with future monitoring efforts. A single museum voucher specimen of each species encountered in each watershed will be collected to document the presence of the species in the area.

<u>Nocturnal Auditory Surveys</u>

Due to the presence in southeastern Montana of cryptic species whose breeding efforts may be dependent on late spring or summer rains (e.g., Plains Spadefoot, Great Plains Toad), non-

random road call surveys will be performed during wet weather conditions in May and early June in regions with suitable roads in reasonable proximity to areas where other field work is being carried out. Call surveys will involve slowly driving roads in the evening and nights immediately following a significant rainfall while listening for species' breeding calls. Vehicles will be stopped every mile or two in low lying areas suitable for containing pooled water and observers will listen for species' breeding calls for 5-10 minutes before moving on. Distance and bearing to breeding choruses will be documented on standard data forms and likely breeding sites will be identified in the office using aerial photos.

Incidental Road Surveys

Amphibians and reptiles detected on roads in the course of other field work will be documented on standard incidental data forms. Furthermore, a specific effort will be made to drive roads in project areas during May when reptiles are likely to be moving from hibernacula. Documentation of centers of reptile activity during this time period will allow for mitigation of road mortalities as a result of increased vehicle traffic associated with fossil fuel or other developments.

Terrestrial Reptile Surveys

Terrestrial reptile survey methods generally follow methods used by Reichel (1997). Habitats deemed most capable of providing hibernacula (e.g., rock outcrops on south facing slopes) will be sampled nonrandomly within randomly selected watersheds. These terrestrial habitat patches will be surveyed using visual encounter methods while lifting cover objects such as rocks, boards, and vegetation. This yields information on presence/non detection and relative abundance (number of individuals detected per surveyor per unit time) of each life history stage of each species at each site that can be used as a measure of current status in relation to various habitat characteristics and for comparison with future monitoring efforts. At each site habitat cover type and substrate associations will be documented on a standard inventory data sheet.

Small Terrestrial Mammals

Small mammal sampling design will be similar to methods described by Carson et al. (2006). Small mammal trapping will be designed to serve two separate goals: 1) a standardized and repeatable methodology which allowed for rigorous comparison among traplines and 2) a methodology intended to maximize capture rates and species diversity with less focus on comparable effort among traplines. Trapline design follows Wilson et al. (1996). Cover types will be identified in the field using a combination of: aerial photographs, topographic maps, cover type GIS layers, as well as *in situ* vegetation assessment. Two traplines will be placed in each cover type in a sampling area (FWP property or conservation easement). Traplines will generally be run for 5 nights, and checked daily. A standard trapline will consist of ten stations, each having a small (Victor) kill trap, a medium (Museum Special) kill trap, and a small (Sherman) live trap. Pitfall traps consisting of coffee can-size buckets will be placed at the first, third, fifth, seventh and ninth stations. Pitfall traps will be filled with approximately 2" of water.

Large (Rat) kill traps and medium (8"x8"x24") live traps will be set in the vicinity of the small mammal traplines for medium-sized mammals such as ground squirrels and small carnivores. All snap traps will be baited with a peanut butter and oat mixture. Small live traps will be baited with rolled oats and birdseed mix. Medium live traps will be baited with sardines or canned cat food. Pitfall traps will not be baited.

In some cases, other trapline configurations may be used (for example, several shorter traplines used to sample small habitat areas such as rock outcrops, rather than one long trapline of 10 stations). Other trapping methods, such as pitfall traps set in arrays with drift fences, may be employed to improve efficiency for some species or species groups. Targeted sampling using non-standard methods may be employed to sample specific species such as northern bog lemmings, that tend not to be sampled by standard survey methods (Reichel 1997).

Bird Point Counts

Birds will be counted at points, clustered as groups of three, on randomly selected transects (Hendricks et al. 2007). Fixed-radius (100-meter) point counts will be situated 300 m apart (birds detected within 75 m of these 100-meter fixed points will be noted separately to allow for comparable data collection with other point-count monitoring programs.

Point counts will be performed within the 5 hours following sunrise during time periods when wind or rain does not hamper activity or detection of birds. During each point count, birds observed during time intervals of zero to three minutes, three to five minutes, and five to ten minutes will be recorded to allow comparison with a variety of songbird point count data. All birds detected visually and/or aurally within a visually estimated 100 meter radius circle from the fixed point will be recorded and documented with the standard 4-letter American Ornithological Union (AOU) 4-letter code. Birds that flyover over the 100-meter radius circle or are detected outside of the 100-meter radius circle during the 10 minute point count will be recorded separately.

Vegetation measurements will be conducted at all point-count stations. Vegetation measurements will include an estimate of the percent coverage and average maximum height of all major structural cover types within each 100 meter radius point-count station (e.g., shrubs, grasses, sedge wetland, barren). A digital photograph and simple sketch will document the distribution of vegetation types. Within each 100 meter radius point-count station, relative vegetation density, maximum vegetation height, average height of standing dead vegetation, and estimated percent cover of grass, forb, shrub, and bare ground at and within five 2-m diameter "mini-plots" will be recorded.

Bird detections and vegetation measurements taken at point-count stations will be recorded on standard field forms and entered into a database designed for management of bird point-count data.

Surveys will provide species occupancy data for updates to Montana's Species of Concern list and CFWCP Tier designations. Continuation of surveys on FWP owned and managed lands, LIP leases, and proposed conservation easement/fee title acquisitions will provide data that can be gathered and used to support potential future purchases, and will document success of existing acquisitions and habitat improvements.

Work items for FY2008:

- Develop statewide sampling schemes for terrestrial reptiles and bats.
- Conduct assessment (Year 1 of 3-year assessment) of the distribution and status of terrestrial reptiles and bats (statewide).

- Conduct statewide diversity monitoring for small mammals, birds and amphibians on state-owned and managed properties, as well as other private lands as available, and utilize new survey information to support potential conservation actions and assess on-going strategies.
- Update POD with new species status and distribution information and review Species of Concern lists relative to new information.

Accomplishments

In collaboration with the FWP Biometrician, nongame biologists, and Information Management Bureau staff we created a sampling scheme that stratifies Montana by ecoregions and further stratified sampling by major covertype classes. After conference calls with federal partners and bat experts we agreed that using a quarter of a 1:24,000 scale quadrangle map was the appropriate sampling unit within which multiple surveys for various taxa could be performed in order to estimate detection probabilities and true rates of occupancy. The U.S. Forest Service agreed to use this same sampling scheme for their 2008 bat surveys in order to make their efforts as comparable as possible. This sampling scheme worked well and is expected that other partners will adopt it because of its compatibility with existing latitude/longitude based sampling efforts and use of existing USGS quadrangle maps.

Animal care and use protocols were approved by the University of Montana and initial field methods and data forms were brought together in a draft packet for field crews. Field protocols and data forms were altered slightly during the course of fieldwork and will probably be updated again this winter.

Six field crewmembers were hired in FY08 and received ten days of training for amphibian, reptile, bat, and small mammal identification, survey techniques, and preparation of museum voucher specimens.

Reptiles and bats were targeted for a large portion of the survey effort during this three-year pilot effort because they are Tier 1 Inventory species under the Comprehensive Fish and Wildlife Conservation Strategy. Surveys for reptiles dominated the field efforts in FY08 with bats being more of the focus in the future.

Variances

None

Grant Funding Segment Amounts:

Proposed:

	Federal Share		Non-Federal Share*		Totals
Direct Costs:	**371,040**		**371,040**		**742,080**
Indirect @ 18.75%	**69,570**		**69,570**		**139,140**
	440,610	**50.00%**	**440,610**	**50.00%**	**881,220**

Actual:

	Federal Share		Non-Federal Share*		Totals
Direct Costs:	**61,452**		**61,452**		**122,904**
Indirect @ 18.73%	**11,510**		**11,510**		**23,020**
	72,962	**50.00%**	**72,962**	**50.00%**	**145,924**

*****The non-federal share will be in the form of general license account dollars. Other forms of non-federal cash match that may be used in addition to, or as a substitute for FWP general license funds include university waived overhead, MNHP cash and in-kind contributions, non-federal grant awards, and donations.

Estimated projects and total direct costs for Montana's fiscal year 2008

Project	Fiscal Year 2008 Proposed Spending
Terrestrial and Riparian/Wetland Habitat Conservation:	
Fee Title Acquisition	$0
Conservation Easements	$0
Long-Term Leases	$200,000
Upland, Riparian and Wetland Enhancement and Restoration	
Contracted Services	$50,000
Materials	$50,000
Baseline Survey	
Personal Services	$87,000
Operations	$23,000
TOTAL	**$410,000**
Species Based Conservation:	
Prairie Dog Assessment	
Personal Services	$25,000
Operations	$25,000
Contracted Services	$50,000
Total	**$100,000**
Survey and Inventory:	
Reptile and Bat Assessment and Wildlife Diversity Monitoring	
Personal Services	$148,000
Operations	**$** 84,080
Total	**$232,080**
Grand Total For FY2008	**$742,080**

Actual projects and total direct costs

Project	**Fiscal Year 2008 Adjusted Spending**	**Actual as of September 30, 2008**
Terrestrial and Riparian/Wetland Habitat Conservation:		
Fee Title Acquisition	$0	$0
Conservation Easements	$1,000,726	$0
Long-term Leases	$0	$0
Upland, Riparian and Wetland Enhancement and Restoration		
Contracted Services	$0	$0
Materials	$0	$0
Baseline Survey		
Personal	$35,520	$24,182
Operations	$15,000	$13,537

TOTAL	**$1,051,246**	**$37,719**
Species Based Conservation:		
Prairie Dog Assessment		
Personal	$2,835	$1,305
Operations	$15,000	$25,720
Contracted Services	$0	$0
Total	**$17,835**	**$27,024**
Survey and Inventory:		
Reptile and Bat Assessment and Wildlife Diversity Monitoring		
Personal	$6,089	$6,637
Operations	$58,000	$51,524
Total	**$64,089**	**$58,161**
Grand Total For FY2008	**$1,133,170**	**$122,904**